

THE MATHEMATICS TEACHER

*An Official Journal of
The National Council of Teachers of Mathematics
(Incorporated)*



Classified Index Volume LXIII

1970

EDITORIAL OFFICE

*National Council of Teachers of Mathematics
1201 Sixteenth Street, NW
Washington, D.C. 20036*

Author Index

ALLEN, JERRY D., and ARORA, MANMOHAN S. A Noncombinatorial Proof of the Number of All Subsets of a Finite Set. Apr., 312.

ALLEN, MERLE C. Two Incorrect Solutions Explored Correctly. Mar., 257-58.

ANDERSON, FRANK A. Translation of Axes Discovered through the Overhead Projector. Dec., 669-70.

ARORA, MANMOHAN S., and ALLEN, JERRY D. A Noncombinatorial Proof of the Number of All Subsets of a Finite Set. Apr., 312.

BECKER, JERRY P. Note on the First International Congress on Mathematical Education. Apr., 318-19.

BECKER, JERRY P., and WILSON, JAMES W. On the Solution of a Problem. Apr., 293-95.

BOROTA, NICHOLAS H., and VEITCH, GLADYS M. Mathematics for the Learning Laboratory to Teach Basic Skills to Tenth, Eleventh, and Twelfth Graders in a Culturally Deprived Area. Jan., 55-56.

BRADLEY, A. DAY. Al-Biruni's Table of Chords. Nov., 615-17.

BRADY, W. G. Complex Roots of a Quadratic Equation Graphically. Mar., 229.

BROWN, RICHARD. Predicting the Outcome of the World Series. Oct., 494-500.

BRUNE, IRVIN H. *Editor*, Ave atque vale. May, 381-82.

BUCHMAN, AARON L. Patterns in Algorithms for Determining whether Large Numbers are Prime. Jan., 30-41.

BUNDRICK, CHARLES M.; FRAZIER, ROBERT C.; and GERBER, HOMER C. Developing a Finite Geometry: A Math Club Approach. Oct., 487-92.

CBMS ADVISORY COMMITTEE ON HISTORY. An Appeal for Preservation of Archival Materials. 392, 440.

CHAPIN, JUNE R. Patterns of Characteristics of Successful Mathematics Teachers and Those Who Leave the Profession: A Case Study. Feb., 159-63.

CHENEY, FITCH. Vux Triangles. May, 407-10.

CHRISTIANSEN, BENT. A Description of the Department of Mathematics, the Royal Danish School of Educational Studies. Mar., 271-79.

COXFORD, ARTHUR F. *Editor*, "Reviews of Films." Jan., 85, Feb., 184; Mar., 283; Apr., 363; May, 449.

CROMACK, NORMAN E. An Assessment of a Mathematics League as Judged by its Participants. May, 432-38.

CUMMINS, KENNETH. Mathematics "In Statu Nascendi." Nov., 567-70.

DANIELLS, ROY. A Space to Live In. Dec., 673-79.

DORN, WILLIAM S. Computer-extended Instruction: An Example. Feb., 147-58.

EAKIN, RICHARD R., *Editor*. "Reviews and Evaluations." Jan., 79-82; Feb., 135-36; Mar., 281-82; Apr., 360-62; May, 446-48; Oct., 531; Nov., 623-24; Dec., 700-704.

EDMONDS, GEORGE F. An Intuitive Approach to Square Numbers. Feb., 113-17.

EVES, HOWARD. *Editor*, "Historically Speaking—." Jan., 67-72; Feb., 165-75; Mar., 267-70; Apr., 345-59; Oct., 519-28; Nov., 615-21; Dec., 690-96.

EWEN, BRUCE. Pascal's Triangle is Upside Down. Feb., 127.

FARRELL, MARGARET A. Area from a Triangular Point of View. Jan., 18-21.

FAWCETT, HAROLD P. The Geometric Continuum. May, 411-20.

FEHR, HOWARD F. *Editor*, "International Mathematical Education." Jan., 73-77; Feb., 177-83; Mar., 271-79; Apr., 318-25; May, 441-45.

_____. Some Remarks on Japanese Mathematics Education. Jan., 73-77.

FERGUSON, W. EUGENE. The Junior High School Mathematics Program—Past, Present, and Future. May, 383-90.

FRAZIER, ROBERT C.; GERBER, HOMER C.; and BUNDRICK, CHARLES M. Developing a Finite Geometry: A Math Club Approach. Oct., 487-92.

FREITAG, ARTHUR H., and FREITAG, HERTA T. The Magic of a Square. Jan., 5-14.

FREITAG, HERTA T., and FREITAG, ARTHUR H. The Magic of a Square. Jan., 5-14.

GARFUNKEL, J. The Recursion Formula. Feb., 121-25.

GATES, JAMES D. Minutes of the Annual Business Meeting. Oct., 543-44.

GENKINS, ELAINE KIVY. A Case for Flexibility in Classroom Instruction. Apr., 298-300.

GERBER, HOMER.; BUNDRICK, CHARLES M.;

and FRAZIER, ROBERT C. Developing a Finite Geometry: A Math Club Approach. Oct., 487-92.

GLAYMANN, MAURICE. Arithmetic in the Fifth Class. Feb., 177-83.

GREENHOLZ, SARAH, and KEIFFER, MILDRED. Never Underestimate the Inner-City Child. Nov., 587-95.

GRIDGEMAN, N. T. Elliptic Parallels. Oct., 481-85.

—. Quadrarcs, St. Peter's, and the Colosseum. Mar., 209-15.

GRINSTEIN, LOUISE S. A Note on the Greatest Integer Function. Jan., 71-72.

HACKER, SIDNEY G. Identification of Napier's Inequalities. Jan., 67-71.

HANNON, HERBERT. A Tribute to John Phelps Everett. Oct., 538.

HLAVATY, JULIUS H. Capsule History of the NCTM. Feb., 137-46. *See also* Correction. Apr., 295.

—. The First International Congress on Mathematics Education. Apr., 319-21.

—. President's Report: The State of the Council. Oct., 539-42.

HOFFMAN, IRWIN, and KAUVAR, LARRY. Polynomial Synthetic Division. May, 429-31.

HOLMES, JOSEPH E. Enrichment or Acceleration? Oct., 471-73.

HUBLEY, MARTIN F., and MACLAY, CHARLES W. An Experiment in High School Calculus. Nov., 609-12.

HUGHES, BARNABAS B., O.F.M. Rhetoric, Anyone? Mar., 267-70.

IACOBACCI, RORA F. Women of Mathematics. Apr., 329-37.

IMAN, RONALD L. Use of Summation Operators for the Derivation of Common Formulae. Apr., 296-97.

JENNINGS, DONALD E. An Intuitive Approach to Pierced Polygons. Apr., 311-12.

JOHNSON, PHILLIP E. The Early Beginnings of Set Theory. Dec., 692-96.

JONES, PHILLIP S. Discovery Teaching—from Socrates to Modernity. Oct., 501-8.

KANE, ROBERT B. The Readability of Mathematics Textbooks Revisited. Nov., 579-81.

KAUVAR, LARRY, and HOFFMAN, IRWIN. Polynomial Synthetic Division. May, 429-31.

KEIFFER, MILDRED, and GREENHOLZ, SARAH. Never Underestimate the Inner-City Child. Nov., 587-95.

KENNEY, MARGARET J. Factor Lattices. Dec., 647-51.

KOETKE, WALTER. *Editor*, "Computer-oriented Mathematics." Jan., 30-41; Feb., 147-58; Apr., 313-17; May, 429-31; Oct., 494-500; Nov., 597-608; Dec., 681-84.

KRUGLAK, HAYM. High School Mathematics Background of College Freshmen before and after Sputnik. Apr., 339-41.

LACH, IVAN. Report of a Study on the Use of Programed Workbooks to Provide for Partially Individualized Mathematics Instruction in the Junior High. Oct., 512-15.

LAIBLE, JON M. Try Graph Theory for a Change! Nov., 557-62.

LEETCH, J. F. A Dialogue on Inverse Functions. Nov., 563-65.

LEHPAMER, PHILIP J. Moment of Inertia Problem—A Classroom Paradox. Nov., 583-84.

LEONARD, WILLIAM A. A Student Computer That Really Works. Dec., 681-84.

MATTHEWS, JOSEPHINE J. Individualized Mathematics the *PLAN* Way. Dec., 685-89.

MCCLAIR, ERNEST G. Pythagorean Paper Folding: A Study in Tuning and Temperament. Mar., 233-37.

MACLAY, CHARLES W., and HUBLEY, MARTIN F. An Experiment in High School Calculus. Nov., 609-12.

MANDELBAUM, JOSEPH, and SCHILD, ALBERT. An Interesting Relationship among the Roots of a Cubic Equation. May, 393-94.

MANN, JOHN E. Polygon Sequences—an Example of a Mathematical Exploration Starting with an Elementary Theorem. May, 421-28.

MANNING, KENNETH R. A History of Extraneous Solutions. Feb., 165-75.

MIELKE, PAUL T. Rational Points on the Number Line. Oct., 475-79.

MILLER, WILLIAM A. A Construction of and Physical Model for Finite Euclidean and Projective Geometries. Apr., 301-6.

—. A Psychedelic Approach to Conic Sections. Dec., 657-59.

MORGAN, WILLIAM P. Prediction of Success in Junior College Mathematics. Mar., 260-63.

MOSTELLER, FREDERICK. Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics. Mar., 199-208.

NICHOLS, EUGENE D. *Editor*, "Experimental Programs." Jan., 55-64; Feb., 159-63; Mar., 260-63; Apr., 339-41; May, 432-38; Oct., 512-15; Nov., 609-12; Dec., 685-89.

NYGAARD, P. H. Fibonacci-Type Sequences. Dec., 671-72.

OAKWOOD, ELLIOTT F. Improving the Witch. Dec., 667-68.

PEAK, PHILIP. *Editor*. "Have You Read . . . ?" Jan., 65-66; Feb., 133-34; Mar., 264-65; Apr., 342-44; May, 439-40.

POOLE, ROBERT R. An Old Stumbling Stone Revisited. Mar., 259.

PRIELIPP, ROBERT W. Perfect Numbers, Abundant Numbers, and Deficient Numbers. Dec., 690-92.

RANUCCI, ERNEST R. On Skewed Regular Polygons. Mar., 219-22.

RAPPAPORT, DAVID. Definition—Consensus or Confusion? Mar., 223-28.

RASOF, BERNARD. Continued Fractions and

"Leap" Years. Jan., 23-27. *See also* Letter to the Editor. May, 445.

ROGERS, MARGARET ANNE. The Rationale of Slide Rule Manipulation. May, 398-401.

ROPE, GEORGE H. Cubic Equations for High School. Apr., 356-59.

SCHERY, STEPHEN D. Topics in Numerical Analysis for High School Mathematics. Apr., 313-17.

SCHILD, ALBERT, and MANDELBAUM, JOSEPH. An Interesting Relationship among the Roots of a Cubic Equation. May, 393-94.

SCHULT, VERYL. The Golden Jubilee Year or From Jazz to Janus. Jan., 43-54.

SHLOMING, ROBERT. Thabit ibn Qurra and the Pythagorean Theorem. Oct., 519-28.

SHOUK, MAHMOUD A. Mathematics Education in the Arab States. Apr., 321-25.

SHULTE, ALBERT P. The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics. Jan., 56-64.

SINGER, RICHARD. Modular Arithmetic and Divisibility Criteria. Dec., 653-56.

SITOMER, HARRY. Motivating Deduction. Dec., 661-64.

SMART, JAMES R. Theorems for Finite Sets of Primes. Apr., 307-10.

SMITH, SANDERSON M. Two Unusual Representations for the Set of Real Numbers. Dec., 665.

SMITHSON, THOMAS W. An Eulerian Development for Pi: A Research Project for High School Students. Nov., 597-608.

STEINER, HANS-GEORG. Some Aspects of a Modern Pedagogy of Mathematics. May, 441-45.

STRETON, WILLIAM C. Use of Directional Derivative in Locating Extrema. Mar., 253-56.

TE SELLE, DAVID W. Pi, Polygons, and a Computer. Feb., 128-32.

THOMPSON, RICHARD B. The Special Case May Be the Hardest Part. Mar., 249-52.

TRIGG, CHARLES W. A Card Trick. May, 395-96.

VAN ENGEN, HENRY. Strategies of Proof in Secondary Mathematics. Dec., 637-45.

VAUGHAN, HERBERT E. The Expression '0°'. Feb., 111-12.

VEITCH, GLADYS M., and BOROTA, NICHOLAS H. Mathematics for the Learning Laboratory to Teach Basic Skills to Tenth, Eleventh, and Twelfth Graders in a Culturally Deprived Area. Jan., 55-56.

VON BARAVILLE, HERMANN. Conic Sections in Relation to Physics and Astronomy. Feb., 101-09.

WILKINSON, JACK. Teaching General Mathematics: A Semi-laboratory Approach. Nov., 571-77.

WILLIAMS, S. IRENE. A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics. Oct., 461-68.

WILSON, JAMES W., and BECKER, JERRY P. On the Solution of a Problem. Apr., 293-95.

WISCAMB, MARGARET. "b-ary" Fractions. Mar., 244-47.

—. A Geometric Introduction to Mathematical Induction. May, 402-4.

YOUNG, WORTH J. The Bouncing Ball Does Come to Rest. May, 391-92.

ZASLAVSKY, CLAUDIA. Black African Traditional Mathematics. Apr., 345-56.

ZWIER, PAUL J. Multitudinous Kinds of Counting Numbers and Their Generating Functions. Nov., 617-21.

Title Index

Al-Biruni's Table of Chords. A. DAY BRADLEY. Nov., 615-17.

An Appeal for Preservation of Archival Materials. CBMS ADVISORY COMMITTEE ON HISTORY. May, 392, 440.

Area from a Triangular Point of View. MARGARET A. FARRELL. Jan., 18-21.

Arithmetic in the Fifth Class. MAURICE GLAYMANN. Feb., 177-83.

An Assessment of a Mathematics League as Judged by its Participants. NORMAN E. CROMACK. May, 432-38.

Ave atque vale. IRVIN H. BRUNE, *Editor*. May, 381-82.

"b-ary" Fractions. MARGARET WISCAMB. Mar., 244-47.

Black African Traditional Mathematics. CLAUDIA ZASLAVSKY. Apr., 345-56.

Board Action on 1969 Delegate Assembly Resolutions. Feb., 185-87.

The Bouncing Ball Does Come to Rest. WORTH J. YOUNG. May, 391-92.

Capsule History of the NCTM. JULIUS H. HLAVATY. Feb. 137-46. *See also* Correction. Apr., 295.

A Card Trick. CHARLES W. TRIGG. May, 395-96.

A Case for Flexibility in Classroom Instruction. ELAINE KIVY GENKINS. Apr., 298-300.

Clark Elected Honorary President. Oct., 460.

Committees and Representatives, 1969/70 Supplemental List. Feb., 188-89.

Complex Roots of a Quadratic Equation Graphically. W. G. BRADY. Mar., 229.

Computer-extended Instruction: An Example. WILLIAM S. DORN. Feb., 147-58.

"Computer-oriented Mathematics." WALTER KOETKE, *Editor*. Jan., 30-41; Feb., 147-58; Apr., 313-17; May, 429-31; Oct., 494-500; Nov., 597-608; Dec., 681-84.

Conic Sections in Relation to Physics and Astronomy. HERMANN VON BARAVILLE. Feb., 101-09.

A Construction of and Physical Model for Finite Euclidean and Projective Geometries. WILLIAM A. MILLER. Apr., 301-6.

Continued Fractions and "Leap" Years. BERNARD RASOF. Jan., 23-27. *See also* Letter to the Editor. May, 445.

Cubic Equations for High School. GEORGE H. ROPES. Apr., 356-59.

Definition—Consensus or Confusion? DAVID RAPPAPORT. Mar., 223-28.

A Description of the Department of Mathematics, the Royal Danish School of Educational Studies. BENT CHRISTIANSEN. Mar., 271-79.

Developing a Finite Geometry: A Math Club Approach. CHARLES M. BUNDRECK, ROBERT C. FRAZIER, and HOMER C. GERBER. Oct., 487-92.

A Dialogue on Inverse Functions. J. F. LEETCH. Nov., 563-65.

Discovery Teaching—from Socrates to Modernity. PHILLIP S. JONES. Oct., 501-8.

The Early Beginnings of Set Theory. PHILLIP E. JOHNSON. Dec., 692-96.

The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics. ALBERT P. SHULTE. Jan., 56-64.

Elliptic Parallels. N. T. GRIDGEMAN. Oct., 481-85.

Enrichment or Acceleration? JOSEPH E. HOLMES. Oct., 471-73.

An Eulerian Development for Pi: A Research Project for High School Students. THOMAS W. SMITHSON. Nov., 597-608.

An Experiment in High School Calculus. MARTIN F. HUBLEY and CHARLES W. MACLAY. Nov., 609-12.

"Experimental Programs." EUGENE D. NICHOLS, *Editor*. Jan., 55-64; Feb., 159-63; Mar., 260-63; Apr., 339-41; May, 432-38; Oct., 512-15; Nov., 609-12; Dec., 685-89.

The Expression '0°'. HERBERT E. VAUGHAN. Feb., 111-12.

Factor Lattices. MARGARET J. KENNEY. Dec., 647-51.

Fibonacci-Type Sequences. P. H. NYGAARD. Dec., 671-72.

The First International Congress on Mathematics Education. JULIUS H. HLAVATY. Apr., 319-21.

The Geometric Continuum. HAROLD P. FAWCETT. May, 411-20.

A Geometric Introduction to Mathematical Induction. MARGARET WISCAMB. May, 402-4.

The Golden Jubilee Year or From Jazz to Janus. VERYL SHULT. Jan., 43-54.

Golden Jubilee Year Inserts. 43-54; 137-46; 239-42; 329-37; 411-20; 501-8; 587-95; 673-79.

"Have You Read . . . ?" PHILIP PEAK, *Editor*. Jan., 65-66; Feb., 133-34; Mar., 264-65; Apr., 342-44; May, 439-40.

High School Mathematics Background of College Freshmen before and after Sputnik. HAYM KRUGLAK. Apr., 339-41.

"Historically Speaking" HOWARD EVES, *Editor*. Jan., 67-72; Feb., 165-75; Mar., 267-70; Apr., 345-59; Oct., 519-28; Nov., 615-21; Dec., 690-96.

A History of Extraneous Solutions. KENNETH R. MANNING. Feb., 165-75.

Identification of Napier's Inequalities. SIDNEY G. HACKER. Jan., 67-71.

Improving the Witch. ELLIOTT F. OAKWOOD. Dec., 667-68.

Individualized Mathematics the *PLAN* Way. JOSEPHINE J. MATTHEWS. Dec., 685-89.

An Interesting Relationship among the Roots of a Cubic Equation. JOSEPH MANDELBAUM and ALBERT SCHILD. May, 393-94.

"International Mathematical Education." HOWARD F. FEHR, *Editor*. Jan., 73-77; Feb., 177-83; Mar., 271-79; Apr., 318-25; May, 441-45.

An Intuitive Approach to Pierced Polygons. DONALD E. JENNINGS. Apr., 311-12.

An Intuitive Approach to Square Numbers. GEORGE F. EDMONDS. Feb., 113-17.

The Junior High School Mathematics Program—Past, Present, and Future. W. EUGENE FERGUSON. May, 383-90.

The Magic of a Square. HERTA T. FREITAG and ARTHUR H. FREITAG. Jan., 5-14.

Mathematics Education in the Arab States. MAHMUD A. SHOUK. Apr., 321-25.

Mathematics for the Learning Laboratory to Teach Basic Skills to Tenth, Eleventh, and Twelfth Graders in a Culturally Deprived Area. NICHOLAS H. BOROTA and GLADYS M. VEITCH. Jan., 55-56.

Mathematics "In Statu Nascendi." KENNETH CUMMINS. Nov., 567-70.

Memberships and Subscriptions. Nov., 627.

Minutes of the Annual Business Meeting. JAMES D. GATES. Oct., 543-44.

Modular Arithmetic and Divisibility Criteria. RICHARD SINGER. Dec., 653-56.

Moment of Inertia Problem—A Classroom Paradox. PHILIP J. LEHPAMER. Nov., 583-84.

Motivating Deduction. HARRY SITOMER. Dec., 661-64.

Multitudinous Kinds of Counting Numbers and Their Generating Functions. PAUL J. ZWIER. Nov., 617-21.

NCTM Affiliated Group Officers. Apr., 364-73.

NCTM Representatives. May, 450-54.

Never Underestimate the Inner-City Child. SARAH GREENHOLZ and MILDRED KEIFFER. Nov., 587-95.

1970 Elections. Report of the Committee on Nominations. Jan., 87.

Nominations for the 1971 Election. Nov., 627.

Nominees for 1970 Elections. Jan., 88-93.

A Noncombinatorial Proof of the Number of All Subsets of a Finite Set. MANMOHAN S. ARORA and JERRY D. ALLEN. Apr., 312.

Note on the First International Congress on Mathematical Education. JERRY P. BECKER. Apr., 318-19.

A Note on the Greatest Integer Function. LOUISE S. GRINSTEIN. Jan., 71-72.

Officers, Directors, Committees, Projects, and Representatives (1970/71). Oct., 544-49.

An Old Stumbling Stone Revisited. ROBERT R. POOLE. Mar., 259.

On Skewed Regular Polygons. ERNEST R. RANUCCI. Mar., 219-22.

On the Solution of a Problem. JAMES W. WILSON and JERRY P. BECKER. Apr., 293-95.

Pascal's Triangle is Upside Down. BRUCE EWEN. Feb., 127.

Patterns in Algorithms for Determining whether Large Numbers are Prime. AARON L. BUCHMAN. Jan., 30-41.

Patterns of Characteristics of Successful Mathematics Teachers and Those Who Leave the Profession: A Case Study. JUNE R. CHAPIN. Feb., 159-63.

Perfect Numbers, Abundant Numbers, and Deficient Numbers. ROBERT W. PRIELIPP. Dec., 690-92.

Pi, Polygons, and a Computer. DAVID W. TESSELLE. Feb., 128-32.

Points and Viewpoints. Dec., 697-99.

Polygon Sequences—an Example of a Mathematical Exploration Starting with an Elementary Theorem. JOHN E. MANN. May, 421-28.

Polynomial Synthetic Division. IRWIN HOFFMAN and LARRY KAUVAR. May, 429-31.

Predicting the Outcome of the World Series. RICHARD BROWN. Oct., 494-500.

Prediction of Success in Junior College Mathematics. WILLIAM P. MORGAN. Mar., 260-63.

President's Report: The State of the Council. JULIUS H. HLAVATY. Oct., 539-42.

A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics. S. IRENE WILLIAMS. Oct., 461-68.

Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics. FREDERICK MOSTELLER. Mar., 199-208.

A Psychedelic Approach to Conic Sections. WILLIAM A. MILLER. Dec., 657-59.

Pythagorean Paper Folding: A Study in Tuning and Temperament. ERNEST G. MCCLAIN. Mar., 233-37.

Quadrarcs, St. Peter's, and the Colosseum. N. T. GRIDIGEMAN. Mar., 209-15.

The Rationale of Slide Rule Manipulation. MARGARET ANNE ROGERS. May, 398-401.

Rational Points on the Number Line. PAUL T. MIELKE. Oct., 475-79.

The Readability of Mathematics Textbooks Revisited. ROBERT B. KANE. Nov., 579-81.

The Recursion Formula. J. GARFUNKEL. Feb., 121-25.

Registrations at NCTM Conventions. Nov.,

628.

Report of a Study on the Use of Programmed Workbooks to Provide for Partially Individualized Mathematics Instruction in the Junior High. IVAN LACH. Oct., 512-15.

"Reviews and Evaluations." RICHARD R. EAKIN, *Editor*. Jan., 79-82; Feb., 135-36; Mar., 281-82; Apr., 360-62; May, 446-48; Oct., 531; Nov., 623-24; Dec., 700-704.

"Reviews of Films." ARTHUR F. COXFORD, *Editor*. Jan., 85; Feb., 184; Mar., 283; Apr., 363; May., 449.

Rhetoric, Anyone? BARNABAS B. HUGHES, O.F.M. Mar., 267-70.

Solicitation of Nominees. Feb., 187-88.

Some Aspects of a Modern Pedagogy of Mathematics. HANS-GEORG STEINER. May, 441-45.

Some Remarks on Japanese Mathematics Education. HOWARD F. FEHR. Jan., 73-77.

A Space to Live In. ROY DANIELLS. Dec., 673-79.

The Special Case May Be the Hardest Part. RICHARD B. THOMPSON. Mar., 249-52.

Strategies of Proof in Secondary Mathematics. HENRY VAN ENGEN. Dec., 637-45.

A Student Computer That Really Works. WILLIAM A. LEONARD. Dec., 681-84.

Teaching General Mathematics: A Semi-laboratory Approach. JACK WILKINSON. Nov., 571-77.

Thabit ibn Qurra and the Pythagorean Theorem. ROBERT SHLOMING. Oct., 519-28.

Thanks from the Editorial Panel. Dec., 697-99.

Theorems for Finite Sets of Primes. JAMES R. SMART. Apr., 307-10.

Topics in Numerical Analysis for High School Mathematics. STEPHEN D. SCHERY. Apr., 313-17.

Translation of Axes Discovered through the Overhead Projector. FRANK A. ANDERSON. Dec., 669-70.

A Tribute to Dr. Lyle W. Ashby. Nov., 630.

A Tribute to John Phelps Everett. HERBERT HANNON. Oct., 538.

Try Graph Theory for a Change! JON M. LAIBLE. Nov., 557-62.

Two Incorrect Solutions Explored Correctly. MERLE C. ALLEN. Mar., 257-58.

Two Unusual Representations for the Set of Real Numbers. SANDERSON M. SMITH. Dec., 665.

Use of Directional Derivative in Locating Extrema. WILLIAM C. STRETTON. Mar., 253-56.

Use of Summation Operators for the Derivation of Common Formulae. RONALD L. IMAN. Apr., 296-97.

Vux Triangles. FITCH CHENY. May, 407-10.

What Does NCTM Spell? Mar., 239-42.

Women of Mathematics. RORA F. IACOBACCI. Apr., 329-37.

"What's New?" Jan., 83, 95; Feb., 175; Mar., 287; Apr., 300, 362; May, 401, 448; Oct., 533-37; Nov., 625; Dec., 705-6.

"Your Professional Dates." Jan., 93-95; Feb., 189-90; Mar., 285-87; Apr., 373-75; May, 454-55; Oct., 549-50; Nov., 629-30; Dec., 707-8.

Subject Index

ABILITY GROUPING

The Junior High School Mathematics Program—Past, Present, and Future, 383–90.

ALGEBRA

Curriculum

A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics, 461–68.

Teaching Methods

A Dialogue on Inverse Functions, 563–65.
An Intuitive Approach to Square Numbers, 113–17.

Strategies of Proof in Secondary Mathematics, 637–45.

Topics in

The Bouncing Ball Does Come to Rest, 391–92.

A Case for Flexibility in Classroom Instruction, 298–300.

Complex Roots of a Quadratic Equation Graphically, 229.

Cubic Equations for High School, 356–59.

A Dialogue on Inverse Functions, 563–65.

Elliptic Parallels, 481–85.

Enrichment or Acceleration? 471–73.

Fibonacci-Type Sequences, 671–72.

A History of Extraneous Solutions, 165–75.

Improving the Witch, 667–68.

An Interesting Relationship among the Roots of a Cubic Equation, 393–94.

Mathematics "In Statu Nascendi," 567–70.

A Noncombinatorial Proof of the Number of All Subsets of a Finite Set, 312.

On the Solution of a Problem, 293–95.

Pascal's Triangle is Upside Down, 127.

Polynomial Synthetic Division, 429–31.

The Recursion Formula, 121–25.

The Special Case May Be the Hardest Part, 249–52.

Topics in Numerical Analysis for High School Mathematics, 313–17.

Translation of Axes Discovered through the Overhead Projector, 669–70.

Two Unusual Representations for the Set of Real Numbers, 665.

Use of Summation Operators for the Derivation of Common Formulae, 296–97.

APPLICATIONS

Business and Consumer

A Note on the Greatest Integer Function, 71–72.

Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics, 199–208.

Miscellaneous

Pythagorean Paper Folding: A Study in Tuning and Temperament, 233–37.

Science and Engineering

The Bouncing Ball Does Come to Rest, 391–92.

Conic Sections in Relation to Physics and

ASTRONOMY

Quadrarcs, St. Peter's, and the Colosseum, 209–15.

APPROXIMATION

See Computation, Approximation

ARITHMETIC

Curriculum

Arithmetic in the Fifth Class, 177–83.

Topics in

Arithmetic in the Fifth Class, 177–83.

"b-ary" Fractions, 244–47.

Modular Arithmetic and Divisibility Criteria, 653–56.

ASTRONOMY

Conic Sections in Relation to Physics and Astronomy, 101–9.

BIBLIOGRAPHY

See Literature or particular subject

CALCULATORS

See Computers

CALCULUS

Miscellaneous

Computer-extended Instruction: An Example, 147–58.

Identification of Napier's Inequalities, 67–71.

The Junior High School Mathematics Program—Past, Present, and Future, 383–90.

Teaching Methods

An Experiment in High School Calculus, 609–12.

Topics in

Elliptic Parallels, 481–85.

The Expression '0', 111–12.

Mathematics "In Statu Nascendi," 567–70.

Moment of Inertia Problem—A Classroom Paradox, 583–84.

A Note on the Greatest Integer Function, 71–72.

Use of Directional Derivative in Locating Extrema, 253–56.

CALENDARS

Continued Fractions and "Leap" Years, 23–27. *See also Letter to the Editor, 445.*

COLLEGE PREPARATION AND ENTRANCE REQUIREMENTS

A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics, 461–68.

COMPUTATION

Approximation

Continued Fractions and "Leap" Years, 23–27. *See also Letter to the Editor, 445.*

Enrichment or Acceleration? 471–73.

Pi, Polygons, and a Computer, 128–32.

Miscellaneous (*See also Computers and Calculators*)

COMPUTERS AND CALCULATORS

Computer-extended Instruction: An Example, 147–58.

An Eulerian Development for Pi: A Research Project for High School Students, 597–608.

Patterns in Algorithms for Determining whether Large Numbers are Prime, 30-41.

Pi, Polygons, and a Computer, 128-32.

Polynomial Synthetic Division, 429-31.

Predicting the Outcome of the World Series, 494-500.

A Student Computer that Really Works, 681-84.

Topics in Numerical Analysis for High School Mathematics, 313-17.

CURRICULUM

Junior High School

The Junior High School Mathematics Program—Past, Present, and Future, 383-90.

Miscellaneous

Mathematics Education in the Arab States, 321-25.

A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics, 461-68.

DEVICES. *See also* Visual aids

The Rationale of Slide Rule Manipulation, 398-401.

EVALUATION

Never Underestimate the Inner-City Child, 587-95.

GENERAL MATHEMATICS

Miscellaneous

Capsule History of the NCTM, 137-46.

See also Correction, 295.

Teaching Methods

Teaching General Mathematics: A Semilaboratory Approach, 571-77.

Topics in

The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics, 56-64.

GEOMETRY

Curriculum

The Geometric Continuum, 411-20.

A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics, 461-68.

Teaching Methods

Developing a Finite Geometry: A Math Club Approach, 487-92.

Discovery Teaching—from Socrates to Modernity, 501-8.

The Geometric Continuum, 411-20.

Motivating Deduction, 661-64.

Strategies of Proof in Secondary Mathematics, 637-45.

Topics in

Area from a Triangular Point of View, 18-21.

Conic Sections in Relation to Physics and Astronomy, 101-9.

A Construction of and Physical Model for Finite Euclidean and Projective Geometries, 301-6.

Developing a Finite Geometry: A Math Club Approach, 487-92.

A Geometric Introduction to Mathematical Induction, 402-4.

An Intuitive Approach to Pierced Polygons, 311-12.

An Old Stumbling Stone Revisited, 259.

On Skewed Regular Polygons, 219-22.

Pi, Polygons, and a Computer, 128-32.

Polygon Sequences—an Example of a Mathematical Exploration Starting with an Elementary Theorem, 421-28.

A Psychedelic Approach to Conic Sections, 657-59.

Quadrarces, St. Peter's, and the Colosseum, 209-15.

Rational Points on the Number Line, 475-79.

Teaching General Mathematics: A Semilaboratory Approach, 571-77.

Thabit ibn Qurra and the Pythagorean Theorem, 519-28.

Two Incorrect Solutions Explored Correctly, 257-58.

Vux Triangles, 407-10.

GRAPHS AND GRAPHING

Complex Roots of a Quadratic Equation Graphically, 229.

Try Graph Theory for a Change! 557-62.

GUIDANCE

Prediction of Success in Junior College Mathematics, 260-63.

HISTORY OF MATHEMATICS

Famous Mathematicians

Al-Biruni's Table of Chords, 615-17.

Thabit ibn Qurra and the Pythagorean Theorem, 519-28.

Women of Mathematics, 329-37.

Miscellaneous

Discovery Teaching—from Socrates to Modernity, 501-8.

Topics in

Cubic Equations for High School, 356-59.

The Early Beginnings of Set Theory, 692-96.

An Eulerian Development for Pi: A Research Project for High School Students, 597-608.

A History of Extraneous Solutions, 165-75.

Identification of Napier's Inequalities, 67-71.

The Magic of a Square, 5-14.

Multitudinous Kinds of Counting Numbers and Their Generating Functions, 617-21.

A Note on the Greatest Integer Function, 71-72.

Perfect Numbers, Abundant Numbers, and Deficient Numbers, 690-92.

Rhetoric, Anyone? 267-70.

INDUCTION, MATHEMATICAL

Discovery Teaching—from Socrates to Modernity, 501-8.

A Geometric Introduction to Mathematical Induction, 402-4.

Motivating Deduction, 661-64.

The Special Case May Be the Hardest Part, 249-52.

LANGUAGE OF MATHEMATICS

Definition—Consensus or Confusion? 223-28.

Rhetoric, Anyone? 267-70.

LIMITS

The Bouncing Ball Does Come to Rest, 391-92.

LITERATURE

Miscellaneous

Have You Read...? 65-66; 133-34; 264-65; 342-44; 439-40.
What's New? 83, 95; 175; 287; 300; 362; 401; 448; 533-37; 625; 705-6.

Reviews

Reviews and Evaluations, 79-82; 135-36; 281-82; 360-62; 446-48; 531; 623-24; 700-704.

Reviews of Films, 85; 184; 283; 363; 449.

LOGIC

Motivating Deduction, 661-64.
Strategies of Proof in Secondary Mathematics, 637-45.

MATHEMATICS IN GENERAL

Cultural Values of

A Space to Live In, 673-79.

Education

Some Aspects of a Modern Pedagogy of Mathematics, 441-45.

MATHEMATICS IN OTHER COUNTRIES

Arithmetic in the Fifth Class, 177-83.
Black African Traditional Mathematics, 345-56.
A Description of the Department of Mathematics, the Royal Danish School of Educational Studies, 271-79.
The First International Congress on Mathematics Education, 319-21.
Mathematics Education in the Arab States, 321-25.
Note on the First International Congress on Mathematical Education, 318-19.
Some Remarks on Japanese Mathematics Education, 73-77.

MEMORIALS AND TRIBUTES

Clark Elected Honorary President, 460.
A Tribute to Dr. Lyle W. Ashby, 630.
A Tribute to John Phelps Everett, 538.

NCTM

Affiliated Groups

Board Action on 1969 Delegate Assembly Resolutions, 185-87.
NCTM Affiliated Group Officers, 364-73.
NCTM Representatives, 450-54.
Your Professional Dates, 93-95; 189-90; 285-87; 373-75; 454-55; 549-50; 629-30; 707-8.

Committee Reports

The Golden Jubilee Year or From Jazz to Janus, 43-54.
1970 Elections. Report of the Committee on Nominations, 87.
Nominations for the 1971 Election, 627.
Nominees for 1970 Elections, 88-93.
Solicitation of Nominees, 187-88.

Meetings

Registrations at NCTM Conventions, 628.
Your Professional Dates, 93-95; 189-90; 285-87; 373-75; 454-55; 549-50; 629-30; 707-8.

Membership

Capsule History of the NCTM, 137-46.
See also Correction, 295.

Memberships and Subscriptions, 627.

Minutes

Minutes of the Annual Business Meeting, 543-44.

Miscellaneous

What Does NCTM Spell? 329-42.
Officers, Committees, Projects, and Representatives
Capsule History of the NCTM, 137-46.
See also Correction, 295.
Clark Elected Honorary President, 460.
Committees and Representatives, 1969/70
Supplemental List, 188-89.
NCTM Representatives, 450-54.
Officers, Directors, Committees, Projects, and Representatives (1970/71), 544-49.
A Tribute to John Phelps Everett, 538.

President's Messages

President's Report: The State of the Council, 539-42.

NOTATION AND TERMINOLOGY. *See also* Language of Mathematics

Definition—Consensus or Confusion? 223-28.

Rhetoric, Anyone? 267-70.

NUMBERS AND NUMBER SYSTEMS, THEORY

Arithmetic in the Fifth Class, 177-83.
"b-ary" Fractions, 244-47.
Black African Traditional Mathematics, 345-56.
Definition—Consensus or Confusion? 223-28.

Factor Lattices, 647-51.

Fibonacci-Type Sequences, 671-72.

An Intuitive Approach to Square Numbers, 113-17.

Modular Arithmetic and Divisibility Criteria, 653-56.

Multitudinous Kinds of Counting Numbers and Their Generating Functions, 617-21.

Patterns in Algorithms for Determining whether Large Numbers are Prime, 30-41.

Perfect Numbers, Abundant Numbers, and Deficient Numbers, 690-92.

Rational Points on the Number Line, 475-79.

Theorems for Finite Sets of Primes, 307-10.
Two Unusual Representations for the Set of Real Numbers, 665.

OPINIONS AND PHILOSOPHIES

Miscellaneous

Ave atque vale, 381-82.

A Space to Live In, 673-79.

Points and Viewpoints

Points and Viewpoints, 697-99.

Thanks from the Editorial Panel, 697-99.

ORGANIZATIONS

An Appeal for Preservation of Archival Materials, 392, 440.

An Assessment of a Mathematics League as Judged by its Participants, 432-38.

Capsule History of the NCTM, 137-46.
See also Correction, 295.

The Golden Jubilee Year or From Jazz to Janus, 43-54.

Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics, 199-208.

PHILOSOPHY. *See also* Opinions and Philosophies

PROBABILITY

- The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics, 56-64.
- Predicting the Outcome of the World Series, 494-500.
- Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics, 199-208.

PROBLEM SOLVING

- A Case for Flexibility in Classroom Instruction, 298-300.
- Computer-extended Instruction: An Example, 147-58.
- On the Solution of a Problem, 293-95.
- Polygon Sequences—an Example of a Mathematical Exploration Starting with an Elementary Theorem, 421-28.
- The Recursion Formula, 121-25.
- Two Incorrect Solutions Explored Correctly, 257-58.

RECREATIONAL MATHEMATICS

- An Assessment of a Mathematics League as Judged by its Participants, 432-38.
- A Card Trick, 395-96.
- The Magic of a Square, 5-14.
- Try Graph Theory for a Change! 557-62.

RESEARCH

Education

- High School Mathematics Background of College Freshmen before and after Sputnik, 339-41.
- Prediction of Success in Junior College Mathematics, 260-63.
- A Report of a Study on the Use of Programmed Workbooks to Provide for Partially Individualized Mathematics Instruction in the Junior High, 512-15.
- Miscellaneous

Patterns of Characteristics of Successful Mathematics Teachers and Those Who Leave the Profession: A Case Study, 159-63.

STATISTICS

- The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics, 56-64.
- Progress Report of the Joint Committee of the American Statistical Association and the National Council of Teachers of Mathematics, 199-208.
- Use of Summation Operators for the Derivation of Common Formulae, 296-97.

SYMBOLISM

- The Expression '0°', 111-12.

TEACHER

Education

- A Description of the Department of Mathematics, the Royal Danish School of Educational Studies, 271-79.
- Never Underestimate the Inner-City Child, 587-95.

Some Remarks on Japanese Mathematics Education, 73-77.

What Does NCTM Spell? 239-42.

Miscellaneous

- The First International Congress on Mathematics Education, 319-21.
- Patterns of Characteristics of Successful Mathematics Teachers and Those Who Leave the Profession: A Case Study, 159-63.

TEACHING METHODS

Discovery

- Discovery Teaching—from Socrates to Modernity, 501.
- An Intuitive Approach to Square Numbers, 113-17.
- Mathematics "In Statu Nascendi," 567-70.
- Polygon Sequences—an Example of a Mathematical Exploration Starting with an Elementary Theorem, 421-28.
- Miscellaneous

A Case of Flexibility in Classroom Instruction, 298-300.

A Dialogue on Inverse Functions, 563-65.

Individualized Mathematics the *PLAN Way*, 685-89.

Mathematics for the Learning Laboratory to Teach Basic Skills to Tenth, Eleventh, and Twelfth Graders in a Culturally Deprived Area, 55-56.

Never Underestimate the Inner-City Child, 587-95.

Some Aspects of a Modern Pedagogy of Mathematics, 441-45.

Teaching General Mathematics: A Semilaboratory Approach, 571-77.

Programmed Instruction

- A Report of a Study on the Use of Programmed Workbooks to Provide for Partially Individualized Mathematics Instruction in the Junior High, 512-15.

TESTS

- An Assessment of a Mathematics League as Judged by its Participants, 432-38.
- An Experiment in High School Calculus, 609-12.
- Prediction of Success in Junior College Mathematics, 260-63.
- Some Remarks on Japanese Mathematics Education, 73-77.

TEXTBOOKS

- The Readability of Mathematics Textbooks Revisited, 579-81.

TRIGONOMETRY

- Al-Biruni's Table of Chords, 615-17.
- Improving the Witch, 667-68.
- An Old Stumbling Stone Revisited, 259.
- A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics, 461-68.

VISUAL AIDS

- A Psychedelic Approach to Conic Sections, 657-59.
- Reviews of Films, 85; 184; 283; 363; 449.
- Translation of Axes Discovered through the Overhead Projector, 669-70.

